a breath analyzer coupled to said breath receiver which analyzes at least one breath of the subject, wherein said apparatus provides an indication of the discrepancy between the end tidal carbon dioxide partial pressure in breath of the subject and the arterial carbon dioxide partial pressure of the subject.

27. (New) Apparatus for computerized breath analysis according to claim 26, wherein said discrepancy is utilized to provide an indication of the arterial carbon dioxide partial pressure of the subject.

28. (New) Apparatus for computerized breath analysis according to claim 26, wherein said breath analyzer comprises a carbon dioxide analyzer and an oxygen analyzer.

29. (New) Apparatus for computerized breath analysis according to claim 28, and also comprising a computational unit wherein:

said oxygen analyzer provides values of the partial pressures of inspired and expired oxygen in said at least one breath of the subject; and

said computational unit utilizes the difference between said values to provide an indication of the discrepancy between said end tidal carbon dioxide partial pressure in breath of the subject and said arterial carbon dioxide partial pressure of the subject.

30. (New) Apparatus for computerized breath analysis according to claim 29, wherein said discrepancy is utilized to provide an indication of the arterial carbon dioxide partial pressure of the subject.

31. (New) Apparatus for computerized breath analysis according to claim 26, and also comprising a respiration diagnosis generator providing an indication of the respiratory status of the subject based on said indication of said discrepancy between said end tidal carbon dioxide

partial pressure in breath of the subject and said arterial carbon dioxide partial pressure of the subject.

32. (New) Apparatus for computerized breath analysis according to claim 30, and also comprising a respiration diagnosis generator providing an indication of the respiratory status of the subject based on said indication of the arterial carbon dioxide partial pressure of the subject.

33. (New) Apparatus according to claim 26, wherein said breath analyzer performs analysis of at least one breath waveform.

34. (New) Apparatus according to claim 30, wherein said breath analyzer performs analysis of at least one breath waveform.

35. (New) Apparatus for computerized breath analysis according to claim 26 and also comprising a pulmonary volume meter, wherein respiratory volume measured by said meter is utilized to provide said indication of the discrepancy between the end tidal carbon dioxide partial pressure in breath of the subject and the arterial carbon dioxide partial pressure of the subject.

36. (New) Apparatus for computerized breath analysis according to claim 26, and also comprising a pulmonary volume meter, said pulmonary volume meter providing flow rate information, wherein said flow rate information is utilized to provide said indication of the discrepancy between the end tidal carbon dioxide partial pressure in breath of the subject and the arterial carbon dioxide partial pressure of the subject.

37. (New) Apparatus for computerized breath analysis according to claim 27, and also comprising a pulmonary volume meter, wherein respiratory volume measured by said meter is utilized to provide said indication of the arterial carbon dioxide partial pressure of the subject.

38. (New) Apparatus for computerized breath analysis according to claim 27, and also comprising a pulmonary volume meter, said pulmonary volume meter providing flow rate information, and wherein said flow rate information is utilized to provide said indication of the arterial carbon dioxide partial pressure of the subject.

39. (New) Apparatus for computerized breath analysis according to claim 26, and also comprising at least one input receiving at least one non-respiratory measurement made on the subject, wherein said at least one non-respiratory measurement made on the subject is utilized to provide said indication of the discrepancy between the end tidal carbon dioxide partial pressure in breath of the subject and the arterial carbon dioxide partial pressure of the subject.

40. (New) Apparatus for computerized breath analysis according to claim 27, and also comprising at least one input receiving at least one non-respiratory measurement made on the subject, and wherein said at least one non-respiratory measurement made on the subject is utilized to provide said indication of the arterial carbon dioxide partial pressure of the subject.

41. (New) Apparatus for computerized breath analysis according to claim 39 or 40, wherein said at least one non-respiratory measurement made on the subject provides information about the condition of the blood circulation such that said information is used to correlate transfer of arterial carbon dioxide from the blood to the exhaled breath of the subject.

42. (New) Apparatus for computerized breath analysis according to claim 39 or 40, wherein said at least one non-respiratory measurement made on the subject provides information about the content of the blood such that said information is used to correlate transfer of arterial carbon dioxide from the blood to the exhaled breath of the subject.

43. (New) Apparatus for computerized breath analysis according to claim 39 or 40, wherein said at least one non-respiratory measurement made on the subject comprises at least one of:

an ECG measurement;

a pulse rate measurement;

a pulse oximetric measurement of arterial oxygen saturation level;

a cardiac output measurement; and

a body temperature measurement.

44. (New) Apparatus for computerized breath analysis comprising:

a breath receiver in fluid communication with a subject;

a breath analyzer coupled to said breath receiver which analyzes at least one breath of the subject and provides at least one output;

a respiration diagnosis generator; and

at least one input receiving at least one non-capnographic measurement made on the subject;

wherein said respiration diagnosis generator provides an indication of the respiratory status of the subject based on said at least one output and on at least one non-capnographic measurement.

45. (New) Apparatus for computerized breath analysis according to claim 44, wherein said at least one non-capnographic measurement made on the subject comprises at least one of: